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Studies on asiatic *Apophylia*. Part 1: new synonyms, lectotype designations, redescrptions, descriptions of new species and notes (Coleoptera: Chrysomelidae: Galerucinae)

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ABSTRACT. The first contribution to the knowledge of Asiatic *Apophylia* based on the study of type materials is presented. *A. pavlae*, *A. sprecherae*, *A. yunnanica* (all from China: Yunnan), *A. kantneri* (from Thailand) and *A. luzonica* (from Philippines: Luzon) spp. nov. are described as new to science; *A. savioi* PIC, 1931 is removed from synonymy; *A. basilana* PIC, 1945 and *A. savioi* are redescrbed. The following new synonyms are proposed: *Malaxioides* FAIRMAIRE, 1888 = *Apophylia* THOMSON, 1858, *A. shirozui* TAKIZAWA, 1985 = *A. grandicornis* (FAIRMAIRE, 1888), *A. robustior* PIC, 1946 = *A. variicollis* LABOISSIÈRE, 1927, *A. fruhstorferi* PIC, 1946 = *A. kannegieteri* PIC, 1946 = *A. weisei* (JACOBY, 1896). *Malaxioides grandicornis* FAIRMAIRE, 1888 is transferred to the genus *Apophylia* (comb. nov.) and *Apophylia nila* MAULIK, 1936 is excluded from *Apophylia* and tentatively transferred to *Pyrrhalta* JOANNIS, 1866 (comb. nov.). Lectotypes are designated for the following taxa: *A. basilana* PIC, 1945, *A. cyanipennis* LABOISSIÈRE, 1927, *A. epipleuralis* LABOISSIÈRE, 1927, *A. fruhstorferi* PIC, 1946, *A. nigriceps* LABOISSIÈRE, 1927, *A. variicollis* LABOISSIÈRE, 1927, *A. saigonensis* PIC, 1927, *A. nila* MAULIK, 1936 and *Malaxia weisei* JACOBY, 1896. *A. cyanipennis* is recorded for the first time from Laos, *A. medvedevi* SAMODERZHENKOV, 1988 for the first time from Thailand and *A. epipleuralis* for the first time from Laos, Myanmar and India. Male genitalia are figured for all species studied.

Key words: entomology, taxonomy, new species, redescription, synonymy, lectotype designation, Coleoptera, Chrysomelidae, Galerucinae, *Apophylia*, Oriental Region

The genus *Apophyllia* THOMSON, 1858, is a unique group of Galerucinae characterized by distinct sexual dimorphism in the structure of claws which are bifid in males and appendiculate in females. The distribution area includes Palaearctic, Oriental and Afrotropical Regions. The entire genus has never been revised.

Until now, about 50 valid species exist within the 63 available names of Asiatic *Apophyllia*. The type specimens are deposited in many world institutions and the study of such an extensive material is very time-consuming. Due this fact the author decided to publish the results in a series of papers. The present contribution contains the results of the study of some primary types and the descriptions of the species new to science found in both institutional and private collections.

The following abbreviations identify the collections housing the material examined:

BMNH - United Kingdom, London, The Natural History Museum (Sharon SHUTE);
BPBM - USA, Hawaii, Honolulu, Bernice P. Bishop Museum (Al SAMUELSON);
DEI - Germany, Eberswalde Finow, Deutsches Entomologisches Institut (Lothar ZERCHE);

ISNB - Belgium, Brussels, Institut Royal des Sciences Naturelles de Belgique (Didier DRUGMAND, MARCEL CLUDTS);

MCSN - Italy, Genova, Museo Civico di Storia Naturale „Giacomo Doria” (Roberto POGGI);

MNHN - France, Paris, Muséum National d’Histoire naturelle (Nicole BERTI);

NHMB - Switzerland, Basel, Naturhistorisches Museum (Eva SPRECHER-UEBERSAX);

SMNS - Germany, Stuttgart, Staatliches Museum für Naturkunde (Wolfgang SCHAWALLER);

USNM - USA, Washington D.C., National Museum of Natural History (Alexander KONSTANTINOV);

ZMHB - Germany, Berlin, Museum für Naturkunde der Humboldt-Universität (Johannes FRISCH);

ZMUH - Germany, Hamburg, Universität von Hamburg, Zoologisches Institut und Zoologisches Museum (Hans RIEFENSTAHL);

DEGG - Germany, Giessen, Dieter ERBER collection;

FKCC - Czech Republic, České Budějovice, František KANTNER collection;

JBCB - Czech Republic, Brno, Jan BEZDĚK collection;

JVCJ - Czech Republic, Jirkov, Jiří VOŘÍŠEK collection;

LMRM – Russia, Moscow, Lev N. MEDVEDEV collection;

RBNN - Netherlands, Nieuwegein, Ron BEENEN collection.

In recording label data from type material examined, a double slash (//) divides data on different labels. Exact label data are cited for type specimens. The type localities are cited in original spelling. Author’s remarks and complementations

are found in square brackets: [p] – preceding data are printed; [h] – the same, but handwritten; [w] - white label; x/y - number of males/number of females.

Genus *Apophyllia* THOMSON, 1858

Apophyllia THOMSON, 1858 (Arch. Ent.) 2: 221 (Type species: *Apophyllia chloroptera* THOMSON 1858; designated by LABOISSIÈRE 1922, Rev. Zool. Afr. 10: 237); DEJEAN 1837: 406 (nomen nudum); DUPONCHEL & CHEVOLAT in d'ORBIGNY 1842: 31 (nomen nudum); ALLARD 1889: LXXI; JACOBY 1903: 22; WEISE 1907: 217; LABOISSIÈRE 1922: 236; WEISE 1923: 124; WEISE 1924: 183; WINKLER 1930: 1316; MAULIK 1936: 78; OGLOBLIN 1936: 138 (in Russian), 369 (in French); WU 1937: 887; CHŪJŌ 1962: 18; GRESSITT & KIMOTO 1963: 426; KIMOTO 1964: 291; WILCOX 1971: 141; SEENO & WILCOX 1982: 102; KIMOTO 1985: 2; ZAYTSEV & SAMODERZHENKOV 1988: 95-98; KIMOTO 1989: 14; DUBESHKO & MEDVEDEV 1989: 157; KIMOTO & TAKIZAWA 1994: 231(key), 304.

Apophyllia [SIC!]: JOLIVET & HAWKESWOOD, 1995: 96.

Malaxia FAIRMAIRE in DEYROLLE & FAIRMAIRE, 1878 (Ann. Soc. Ent. Fr.) (5)8: 139 (Type species: *Malaxia flavovirens* FAIRMAIRE in DEYROLLE & FAIRMAIRE, 1878, by monotypy); BALY 1887: 268; ALLARD 1888: 331; FAIRMAIRE 1888: 156; ALLARD 1889: LXXX; BALY 1889: 309; WEISE 1897: 296; LABOISSIÈRE 1922: 236 (= *Apophyllia* DUPONCHEL & CHEVOLAT).

Glyptolus JACOBY, 1884 (Notes Leyd. Mus.) 6: 62-63 (Type species: *Glyptolus viridis* JACOBY, 1884, by monotypy); BALY 1887: 268 (= *Malaxia* FAIRMAIRE 1878); FAIRMAIRE 1888: 156; ALLARD 1888: 331; LABOISSIÈRE 1922: 236 (= *Apophyllia* DUPONCHEL & CHEVOLAT).

Glyptolus [SIC!]: BALY 1887: 268.

Glyptorus [SIC!]: CHŪJŌ 1962: 18.

Galerucesthis WEISE 1897 (Dtsch. Ent. Z.), 1896(1897): 296 (Type species: *Auchenia* (?) *thalassina* FALDERMANN, 1835, by monotypy); WEISE 1924: 183 (= *Apophyllia* DUPONCHEL & CHEVOLAT)

Glaerucesthis [SIC!]: KIMOTO, 1985: 2.

Malaxioides FAIRMAIRE 1888 (Rev. d'Ent.) 7: 155 (Type species: *Malaxioides grandicornis* FAIRMAIRE, 1888, by monotypy); WEISE 1924: 180; WINKLER 1930: 1316; OGLOBLIN 1936: 144 (in Russian), 369 (in French); GRESSITT & KIMOTO 1963: 418; WILCOX 1971: 97; SEENO & WILCOX 1982: 101, **syn. nov.**

FAIRMAIRE (1888) differentiated the genus *Malaxioides* from *Apophyllia* by simple claws in male. However, he evidently overlooked and/or misinterpreted this character. The holotype (male) of *Malaxioides grandicornis* was examined and the claws are distinctly bifid in male as is typical for *Apophyllia*. Based on the material of *Malaxioides grandicornis* (see the material examined under *Apophyllia grandicornis*), the genus *Malaxioides* is considered to be a new synonym of the genus *Apophyllia*.

Apophyllia basilana PIC, 1945

Apophyllia basilana PIC, 1945: L'Échange, 61: 3 (type locality: Basilan); WILCOX 1971: 143; KIMOTO 1990: 26

TYPE MATERIAL EXAMINED

Lectotype (female), present designation, and paralectotype (female), labelled: „Sani Van Basilan [w, h] // Type [red label, p] // basilana n. sp. [w, h]” (in

MNHN). Specimens are provided with one red label: „LECTOTYPE [or PARALECTOTYPE]”.

ADDITIONAL MATERIAL EXAMINED

PHILIPPINES: Samar, Cathbaloghan (2/2 in NHMB, 11/1 in ZMHB); Manila (1/0 in NHMB, 0/1 in ZMHB, 0/1 in BMNH); Manila, 1911 (1/1 in USNM); Mindanao, Dansalan (1/1 in NHMB, 0/3 in ZMHB); Mindanao, Mt. Apo School, 15 km SW Davao, 500 m, 22.-31.x.1965, D. DAVIS leg. (2/2 in USNM); Mindanao (3/2 in ZMHB); Mindanao, v.1911, C. V. PIPER leg. (1/0 in USNM); Mindanao, Iligan, Baker leg. (1/1 in USNM); Luzon, Los Banos, BAKER leg. (4/1 in USNM); Luzon, Los Banos (2/7 in ZMHB, 0/1 in NHMB); Luzon, Tayabas, R. C. MCGREGOR leg. (0/1 in USNM); Luzon, Mt. Makiling (13/18 in USNM); Luzon, Mt. Banahao, 25.iv.1914, BOETTCHER leg. (0/1 in ZMHB); Luzon, Montalban, BÖTTCHER leg. (0/1 in ZMHB); Luzon, Jagor (0/3 in ZMHB), Luzon, HocoSur, MCGREGOR leg. (0/1 in USNM); Luzon, Isabela Pr., Sn Mariano, MCGREGOR leg. (0/1 in USNM); Luzon, Santa Maria Laguna, 23.iv.1923, R. C. MCGREGOR leg. (0/1 in USNM); Luzon, Bataan prov., Limay, MCGREGOR leg. (1/2 in USNM).

Generally, the descriptions by PIC are very short, usually several-lined, and it is very difficult to identify his taxa without examination of the type material. *A. basilana* was described based on two females from the Basilan Isl. (Philippines). During the study of the institutional material of *Apophyllia*, I had the possibility to examine many specimens of *A. basilana*, including males. Due this fact I decided to redescribe *A. basilana*.

REDESCRIPTION

Body flattened, subparallel, slightly widened backwards, densely pubescent, dull.

Head bicolorous; vertex and postgenae black, frontal tubercles, anterior part of head, mouthparts and underside yellow, frontal tubercles occasionally darkened. Pronotum yellow, sometimes with small indistinct dark spot in the middle. Scutellum, meso-, metasternum and abdomen black. Posterior margins of last visible sternite and of pygidium yellow in male, black in female. The first 3 or 4 antennomeres yellow, the rest black. Legs yellow, tarsi somewhat infusate. Elytra metallic green or blue.

Labrum transverse, anterior margin slightly sinuate, covered with several pale setae. Anterior part of head lustrous, sparsely covered with very small punctures, vertex dull, coarsely and densely punctate. Interantennal space with small deep groove. Frontal tubercles small, subtriangular, slightly elevated above vertex, lustrous. Vertex densely covered with short pale hairs. Antennae slender, 0.85 times as long than the body in male (0.65 times in female), length ratio of antennomeres 1 to 11: 16:7:14:18:16:16:14:14:11:12:13.

Pronotum transverse, 1.80 - 1.95 times as broad as long, widest at the first third, narrowed anteriad and posteriad, dull, whole surface with coarse and dense

punctures, laterally with 2 depressions, small median feeble depression situated in front of pronotal base. Anterior and posterior margins slightly sinuate. All margins indistinctly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, rounded, with very small dent directed upwards.

Scutellum small, initially almost parallel, then widely rounded, surface with small dense punctures, opaque.

Elytra broader than base of pronotum, almost parallel, slightly widened backwards, opaque. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface shiny and finely punctate and covered with pale hairs. Male metasternum modified to small protuberance directed downwards (Fig. 1), with short feeble furrow in the middle. Female metasternum moderately concave.

Basimetatarsomere 1.5 times as long as two following metatarsomeres combined.

Body length 4.25-5.90 mm.

The shape of aedeagus as in Fig. 2.

Sexual dimorphism: Male: Metasternum modified to small protuberance directed downwards, abdomen black, the last visible sternite with large semicircular excision, posterior margins of last visible sternite and of pygidium pale, antennae longer (0.85 times as long as the body), claws bifid. Female: Metasternum moderately concave, abdomen black, the last visible sternite complete, antennae shorter (0.65 times as long as the body), claws appendiculate.

DISTRIBUTION.

Philippines (Basilan, Samar, Mindanao, Luzon).

DIAGNOSIS

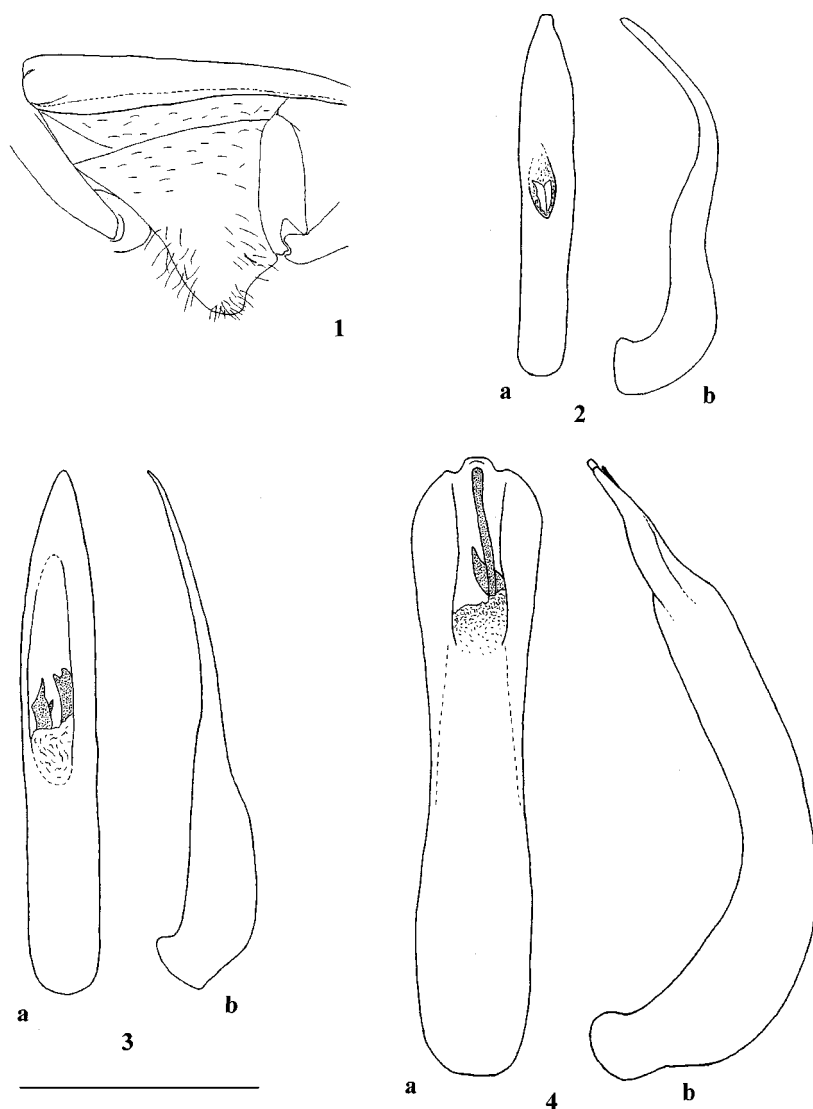
A. basilana is well characterized by the metasternum produced downwards in male (Fig. 1) and comparable with several species of similarly modified metasternum. *A. flavovirens* (FAIRMAIRE, 1878) sensu auct. from China, Laos, Vietnam and Thailand has metasternal protuberance broadened and with deep furrow in the middle. Metasternum is asymmetrical and hook-like in *A. securigera* CHŪJŌ, 1962 (Thailand and Vietnam) and bifurcated in *A. furcigera* CHŪJŌ, 1962 (Thailand) and *A. celebensis* PIC, 1927 (Sulawesi).

Apophyllia cyanipennis LABOISSIÈRE, 1927

Apophyllia cyanipennis LABOISSIÈRE, 1927: Ann. Soc. Ent. Fr., 96: 59-60 (type locality: Tonkin: Hoa-Binh); WILCOX 1971: 143; WEIDNER 1976: 150; SAMODERZHENKOV 1988: 77 (key), 82 (Vietnam; feeding on *Callicarpa* and *Cordia*); KIMOTO 1989: 14 (key), 15 (Vietnam); MOHAMEDSAID 2000: 348 (Malaysia).

TYPE MATERIAL EXAMINED

Lectotype (male), present designation, and 3 paralectotypes (females), labelled: „Hoa Binh Tonkin de Cooman [w, p] // „TYPE [red letters, w, p] // *Apophylia cyanipennis* m. [h] V. Laboissière - Dét. [w, p]” (in ZMUH); paralectotype (female), labelled: „Coll. R. I. Sc. N. B. Nord Vietnam [p] R. P. de



1-4. 1 - male metasternal protuberance of *Apophylia basilana* in lateral view, 2-4 - aedeagus (a - dorsal view, b - lateral view): 2 - *A. basilana*, 3 - *A. cyanipennis*, 4 - *A. epipleuralis*. Scale 1 mm

Cooman [yellow label on which two following labels are glued, h] // Hoa Binh [h] Tonkin [w, p] // Coll. V. Laboissière [w, p] // Cf. Ann. Soc. Ent. Fr., 1927 p. 59-60 [w, h] // *Apophyllia cyanipennis* m. [h] V. Laboissière - Dét. [w, p] // Para-type [orange label, p]" (in ISNB). Specimens are provided with one red label: „LECTOTYPUS [or PARALECTOTYPUS] *Apophyllia cyanipennis* Laboissiere, 1927, des. J. Bezděk 2002”.

ADDITIONAL MATERIAL EXAMINED

VIETNAM: Vinh Phu prov., Tam Dao, on *Callicarpa*, 30.v.1985 (1/0 in JBCB, 4/0 in SMNS); Tam Dao, 900 m, 13.-24.v.1989, A. OLEXA leg. (1/0 in NHMB); 70 km NW of Hanoi, Tam Dao, 900-1200 m, 21,27N 105,39E, 9.-19.v.1996, PACHOLÁTKO & DEMBICKÝ leg. (1/0 in NHMB); LAOS: Boli Kham Xai prov., 8 km NE of Ban Nape, 600 m, 18°21'N 105°08'E, 1.-18.v.2001, C. L. PEŠA leg. (0/1 in JBCB).

Aedeagus as in Fig. 3.

DISTRIBUTION

Vietnam. New species for Laos. MOHAMEDSAID (2000) reported *A. cyanipennis* also from Malaysia but without detailed data, this record needs verification.

Apophyllia epipleuralis LABOISSIÈRE, 1927

Apophyllia epipleuralis LABOISSIÈRE, 1927: Ann. Soc. Ent. Fr., 96: 60-61 (type locality: Tonkin: Ha-Giang; Yunnan: Pe-Yen-Tsin); WINKLER 1930: 1316; WU 1937: 887 (Yunnan); GRESSITT & KIMOTO 1963: 427 (key), 428 (S China, Hainan); WILCOX 1971: 143; WEIDNER 1976: 150; SAMODERZHENKOV 1988: 76 (key), 80 (Vietnam); KIMOTO 1989: 14 (key), 15 (Thailand, Vietnam, S China, Hainan).

Apophyllia geniculata PIC, 1931: Mél. Exot. Ent. 57: 21 (type locality: Chine); GRESSITT & KIMOTO 1963: 428 (= *epipleuralis*).

TYPE MATERIAL EXAMINED

Apophyllia epipleuralis LABOISSIÈRE, 1927:

Lectotype (male), present designation, and 3 paralectotypes (females), labelled: „Yunnan - Sen [w, h] // TYPE [red letters, w, p] // *Apophyllia epipleuralis* m [h] V. Laboissière - Dét. [w, p] // LECTOTYPUS [or PARALECTOTYPUS] *Apophyllia epipleuralis* Laboissiere 1927, des. J. Bezděk 2002 [red label, p]" (in ZMUH); paralectotype (female), labelled: „Coll. R. I. Sc. N. B. Chine [yellow label on which two following labels are glued, p] // Yunnan Sen [w, h] // Coll. V. Laboissière [w, p] // *Apophyllia epipleuralis* m. paratype [h] V. LABOISSIÈRE - DÉT. [w, p] // Para-type [orange label, p] // Cf. Ann. Soc. Ent. Fr., 1927 p. 60-61 [w, h] // PARALECTOTYPUS *Apophyllia epipleuralis* Laboissiere 1927, des. J. Bezděk 2002 [red label, p]" (in ISNB); paralectotypus (male), labelled: „Coll. R. I. Sc. N. B. Chine [yellow label on which two following labels are glued, p] // Yunnan Sen [w, h] // Coll. V. Laboissiere [w, p] // V. Laboissière - det., 19[p] 27[h]: [p] *Apophyllia epipleuralis* Laboiss. [w, h] // Para-type [orange label, p] /

/ Cf. Ann. Soc. Ent. Fr., 1927 p. 60-61 [white, h] // PARALECTOTYPUS *Apophylia epipleuralis* Laboissiere 1927, des. J. Bezděk 2002 [red label, p]" (in ISNB); paralectotype (female), labelled: „Coll. R. I. Sc. N. B. Chine [yellow label on which one following label is glued, p] // PE YEN TSIN YUNNAN Coll. de Touzalin [w, p] // *Apophylia epipleuralis* m. 1927 [h] V. Laboissière - Dét. [w, p] // Para-type [orange label, p] // PARALECTOTYPUS *Apophylia epipleuralis* Laboissiere 1927, des. J. Bezděk 2002 [red label, p]" (in ISNB); 2 paralectotypes (male and female), labelled: „Coll. R. I. Sc. N. B. Chine [p] Yunnan Pe Yen Tsin Ex Coll. de Touzalin [yellow label, h] // V. Laboissiere det. 19[p] 27 *Apophylia epipleuralis* m. [w, h] // Para-type [orange label, p] // PARALECTOTYPUS *Apophylia epipleuralis* Laboissiere 1927, des. J. Bezděk 2002 [red label, p]" (in ISNB); paralectotype (female), labelled: „P. Guerry Roanne [w, p] // COTYPE [w, red letters, p] // *Apophylia epipleuralis* m. [h] V. Laboissière - Dét. [w, p] // PARALECTOTYPE [red label, p]" (in MNHN); paralectotype (female), labelled: „Yunnan-Sen [w, h] // Laboissière vidit [w, h] // PARALECTOTYPE [red label, p]" (in MNHN); 2 paralectotypes (males), labelled: „P. Guerry Roanne [w, p] // PARALECTOTYPE [red label, p]" (in MNHN); paralectotype (male), labelled: „Coll. on LE MOULT Naturaliste Paris [w, p] // Sud Yunnan Tche-Ping-Tcheou [w, p] // PARALECTOTYPE [red label, p]" (in MNHN); paralectotype (female), labelled: „P. Guerry Roanne [w, p] // *Apophylia epipleuralis* m. [h] V. Laboissière - Dét. [w, p] // PARALECTOTYPE [red label, p]" (in MNHN); paralectotype (female), labelled: „Museum Paris Yunnan S-O 24°N Pe-Yen-Tsin (Mines de Sel) (Père Simeon Ten) P. Guerry 1924 [w, p] // *Apophylia epipleuralis* m. [h] V. Laboissière - Dét. [w, p] // PARALECTOTYPE [red label, p]" (in MNHN); paralectotype (female), labelled: „Museum Paris Yunnan [p] Yunnan-Sen [h] P. Guerry 1924 [w, p] // PARALECTOTYPE [red label, p]" (in MNHN); paralectotype (male), labelled: „China: Yunnan. [w, p] // Pres. by Imp. Bur. Ent. Brit. Mus. 1926-443. [w, p] // [w, h, illegible] // P. Guerry Roanne [w, p] // Pres. by V. Laboissiere. [w, p] // COTYPE [w, red letters, p] // „Co[h] Type[p]" [h] No. [p] 44/20 [h] U.S.N.M. [red label, p] // *A. epipleuralis* Labois. [h] det. K.G. Blair. [w, p] // PARALECTOTYPUS *Apophylia epipleuralis* Laboissiere 1927, des. J. Bezděk 2002 [red label, p]" (in USNM).

Apophylia geniculata PIC, 1931:

Holotype (female), labelled: „Kweitschou China [w, p] // n sp [w, h] // type [w, h] // TYPE [red label, p] // *geniculata* n.sp. [w, h] // HOLOTYPE [red label, p]" (in MNHN).

ADDITIONAL MATERIAL EXAMINED

CHINA: Szechwan, Yunling Mts. (7/7 in NHMB); Canton, 1909-1910, S. V. MELL leg. (2/0 in ZMHB); Hainan Isl., 10.-25.iii.1909, H. SCHOEDE leg. (0/1 in ZMHB); Hainan Isl., Fan Ta Chuen, Hung Mo Tung valley, v. 1929 (1/2 in BMNH); LAOS: Hua Phan prov., Phu Loei N.P., Ban Sakok, 20°10'N 103°12'E, 23.-26.v.2001, J. BEZDĚK leg. (2/1 in JBCB); Hua Phan prov., Ban Saluei, Phu

Phan Mt., 1500-2000 m, 20°15'N 104°02'E, 26.iv.-11.v.2001, J. BEZDĚK leg. (0/1 in JBCB); Luang Namtha env., 800-1200 m, v.1997 (1/0 in JBCB); THAI: Loei prov., Phu Kradung N.P., 1300 m, 16°53'N, 101°47'E, 11.-15.v.1999, M. ŘÍHA leg. (1/0 in JBCB); Phu Kradung N.P., 17.vi.2000, R. ŠIGUT leg. (0/1 in JBCB); VIETNAM: Montes Mauson, April, May, 2-3000', H. FRUHSTORFER leg. (3/0 in ZMHB); MYANMAR: Putao Dist., Sumprabum, iv.-v.1925, B. FISCHER leg. (1/0 in BMNH); INDIA: Assam, Khasia hills, 1000-3000 ft. (1/0 in BMNH)

A. geniculata was described based on one female from China. Undoubtedly, it is a synonym of *A. epipleuralis* as was correctly stated by GRESSITT & KIMOTO (1963).

Aedeagus as in Fig. 4.

DISTRIBUTION

China, Vietnam, Thailand. New species for Laos, Myanmar and India.

Apophyllia eroshkinae SAMODERZHENKOV, 1988

Apophyllia eroshkinae SAMODERZHENKOV, 1988: In: Faun. Ecol. Nasek. V'etnama: 76 (key), 81 (type locality: prov. Vinh-phu: Tamdao; feeding on *Callicarpa*).

TYPE MATERIAL EXAMINED

6 paratypes (5 males, 1 female), labelled: „2. Vietnam, Prov. Vinh-Phu, Tamdao, 800-1200 m, forest 12-22.IV.1986, leg. L.MEDVEDEV. S.GOLOVATCH et al. [white, p] // Paratypus [red, p] // *Apophyllia eroshkinae* [h] E. Samoderzhnikov det. [white, p]” (in SMNS, 1 male in JBCB).

ADDITIONAL MATERIAL EXAMINED

VIETNAM: Vinh Phu prov., Tamdao, 80 km N of Hanoi, 900 m, 15.-17.iv.1986 (1/0 in SMNS).

Aedeagus as in Fig. 5.

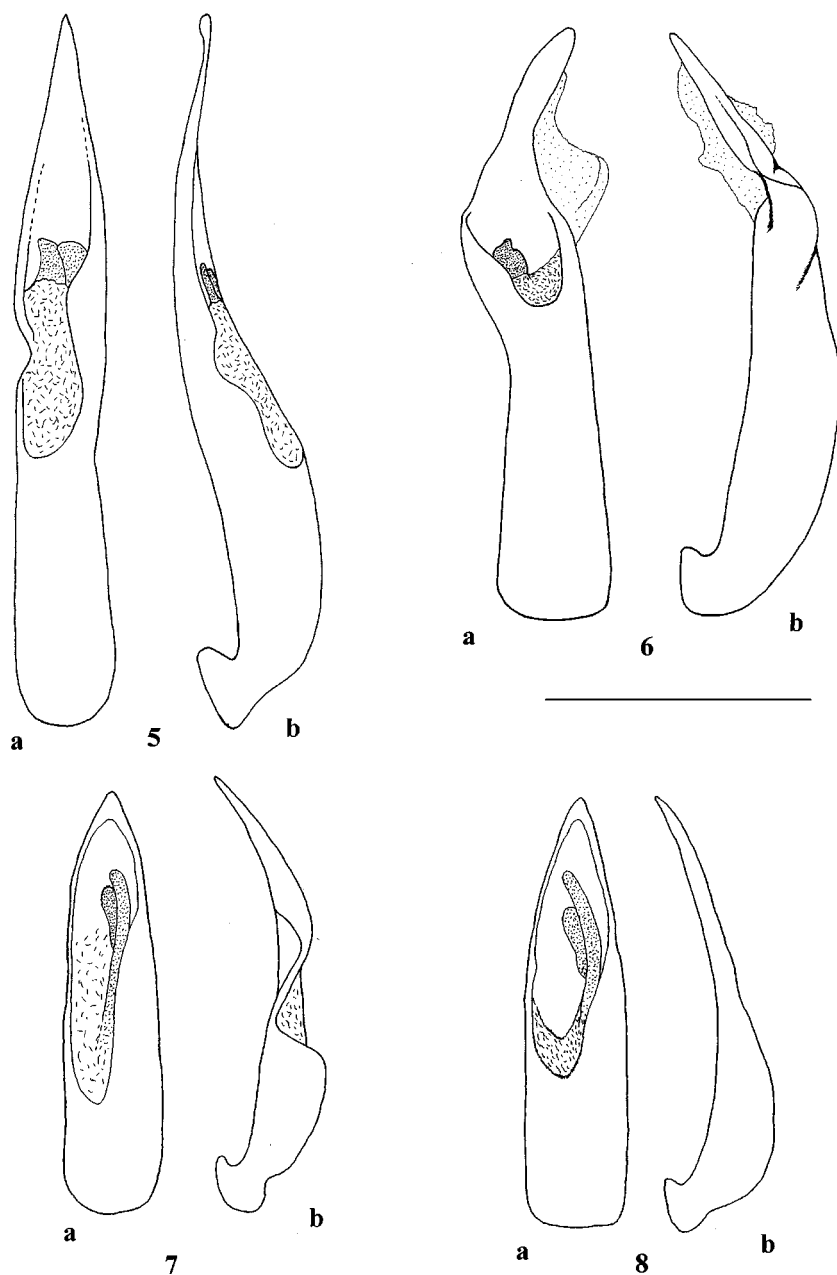
DISTRIBUTION

Known only from the type locality Tamdao (Vietnam: Vinhphu prov.)

Apophyllia grandicornis (FAIRMAIRE, 1888) comb. nov.

Malaxioides grandicornis FAIRMAIRE, 1888: Rev. d'Ent. 7: 155 (type locality: Pékin); WEISE 1924: 180; WINKLER 1930:1316; OGLOBLIN 1936: 144 (in Russian), 395 (in French); GRESSITT & KIMOTO 1963: 418 (N China: Hopei); WILCOX 1971: 97

Apophyllia shirozui TAKIZAWA, 1985: Nature & Life, 15(1): 15-16 (type locality: Mt. Hanna, Cheju-do Isl.), **syn. nov.**



5-8. Aedeagus (a - dorsal view, b - lateral view): 5 - *Apophyllia eroszkinae*, 6 - *A. grandicornis*, 7 - *A. nigriceps* (Lectotype), 8 - *A. nigriceps*. Scale 1 mm

TYPE MATERIAL EXAMINED

Malaxioides grandicornis FAIRMAIRE, 1888:

Holotype (male), labelled: „Pekin[w, h, partly illegible] // *Malaxioides grandicornis* Fairm. [w, h] // Ex Muséo L. Fairmaire 1893 [w, p] // HOLOTYPE [red label, p] // Muséum Paris [p] ex [h] 1952 [p] Allard [h] Coll. R. Oberthur [w, p]” (in MNHN).

ADDITIONAL MATERIAL EXAMINED

CHINA: Süd-Schensi (1/0 in NHMB); Mandschurei, Charbin, 2.vii.1950 (1/0 in NHMB); Nord-Shansi, Fan-sze-U-tai, vii.1936 (1/0 in NHMB); Sichuan, SE Ya'an, 20.vii.1994, K.-W. ANTON leg. (1/0 in RBNN); Kan-ssu, 1885, G. PATANIN (1/1 in ZMHB); Kukuna, KOLTZE (1/4 in ZMHB); Tukiang, coll. HAUSER (1/9 in ZMHB); Charbin, 2.vii.1951 (3/9 in BMNH).

Malaxioides grandicornis FAIRMAIRE (1888) is transferred to the genus *Apophyllia*. FAIRMAIRE overlooked bifid claws in holotype and published it as claws simple. Possibly, some records of *A. thalassina* (FALDERMANN, 1835) from China may refer to *A. grandicornis*.

The type material of *A. shirozui* was not studied. It was described based on one couple from Cheju-do Isl. (Korea). The types might be deposited in Entomological Institute, Hokkaido University, Sapporo, Japan (TAKIZAWA 1985; TAKIZAWA 2002 pers. comm.), but they were not discovered in the collections of this institution (OHARA 2002, pers. comm.). However, TAKIZAWA's description perfectly fits the holotype of *A. grandicornis*, as well as the drawing of the very unusual shape of aedeagus.

Aedeagus as in Fig. 6.

DISTRIBUTION

China, Korea.

***Apophyllia medvedevi* SAMODERZHENKOV, 1988**

Apophyllia medvedevi SAMODERZHENKOV, 1988: In: Faun. Ekol. Nasek. V'etnama: 75 (key), 77-78 (type locality: Vietnam: prov. Daklak, Buonmetchuot env.).

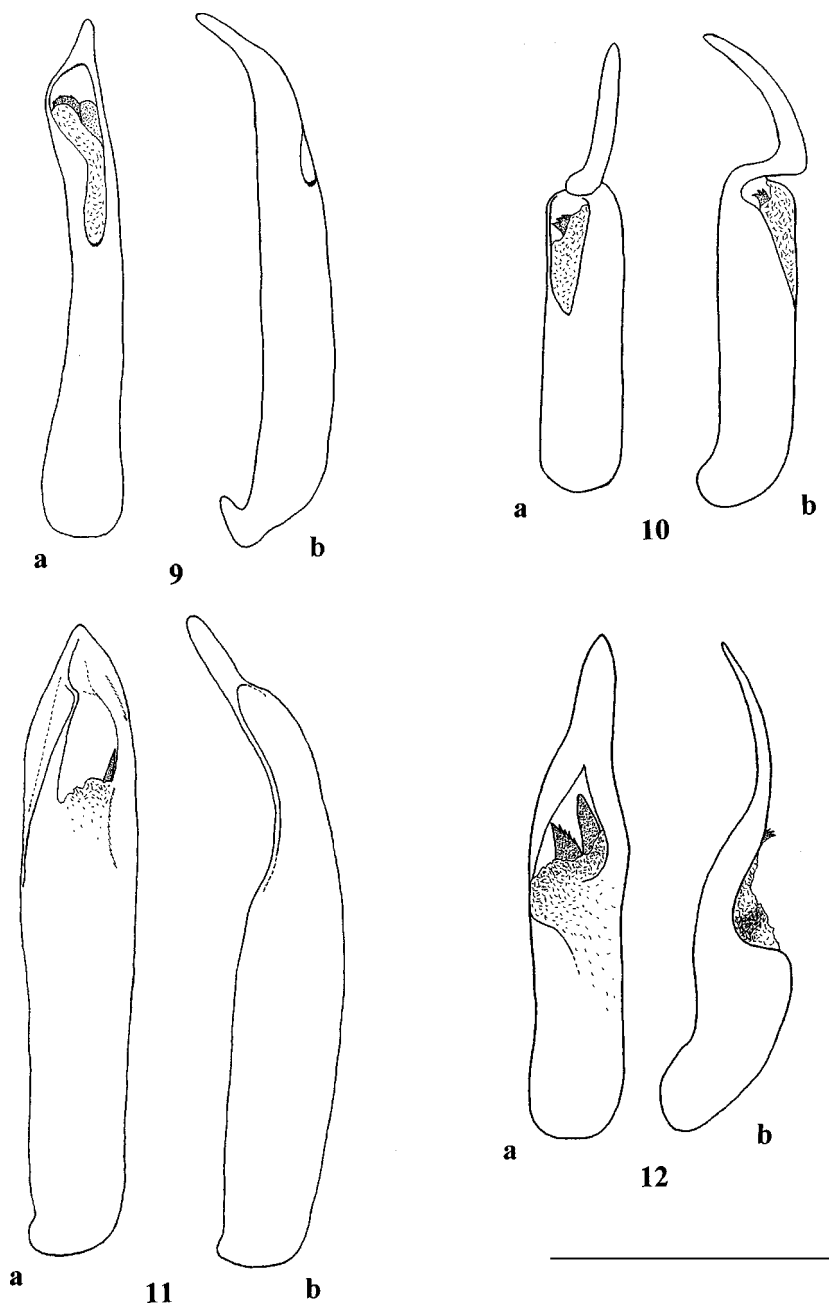
TYPE MATERIAL EXAMINED

Paratype (male), labelled: „Paratypus [red, p] // SRV, Prov. Gialai-Contum, Buon-Loi, 40 km N Ankhe [p] 3 [h]VII 198[p]1.[white label, h] // *Apophyllia medvedevi* [h] E. Samoderzhnikov det. [white, p]” (in LMRM).

ADDITIONAL MATERIAL EXAMINED

THAILAND: Mae Hong Son, Ban Huai Po, 1600-2000 m, 19.19N 97.59E, 9.-16.v.1991, L. DEMBICKÝ leg. (1/0 in JBCB); Mae Hong Son, Soppong env., 600 m, 28.v.-2.vi.1999, M. ŘÍHA leg. (1/0 in JBCB).

Aedeagus as in Fig. 9.



9-12. Aedeagus (a - dorsal view, b - lateral view): 9 - *Apophyllia medvedevi*, 10 - *A. purpurea*, 11 - *A. rugiceps*, 12 - *A. savioi*. Scale 1 mm

DISTRIBUTION

It was described based on 4 specimens from the Vietnamese provinces Daklak and Gialai-Kontum. New species for Thailand.

***Apophyllia nigriceps* LABOISSIÈRE, 1927**

Apophyllia nigriceps LABOISSIÈRE, 1927: Ann. Soc. Ent. Fr., 96: 62 (type locality: Yunnan-Fou); WINKLER 1930: 1316; WU 1937: 887 (Yunnanfu); GRESSITT & KIMOTO 1963: 427 (key), 431 (Yunnan, Fukien); KIMOTO 1964: 291 (Japan, key); WILCOX 1971: 146; WEIDNER 1976: 150; KIMOTO 1985: 2 (Japan); SAMODERZHENKOV 1988: 76 (key), 80 (Vietnam); KIMOTO & TAKIZAWA 1994: 233 (key), 305 (Japan).

TYPE MATERIAL EXAMINED

Lectotype (male), present designation, labelled: „Yun Nan Fou ex. Pic [w, h] // TYPE [w, red letters, p] m [w, h] // *Apophyllia nigriceps* m [h] V. Laboissière - Dét. [w, p] // LECTOTYPUS *Apophyllia nigriceps* Laboissiere, 1927, des. J. Bezděk 2002 [red label, p]” (in ZMUH); paralectotype (male), labelled: „Yunnan Fou Chine [w, h] // TYPE [w, red letters, p] // *Apophyllia nigriceps* m [h] V. Laboissière - Dét. [w, p] // PARALECTOTYPE [red label, p]” (in MNHN).

ADDITIONAL MATERIAL EXAMINED

CHINA: W Yunnan, Chao-chow fu, 2300 m, 23.viii.-21.ix.1914, S. MELL leg. (1/0 in ZMHB); Yun-nan Sen (5/0 in ZMHB).

The aedeagus of the lectotype is weakly sclerotized (Fig. 7) mainly in lateral view, due to which fact it can be easily misinterpreted. Fully sclerotized aedeagus as in Fig. 8 (specimen from Yunnan - Sen, ZMHB).

DISTRIBUTION

China, Vietnam (SAMODERZHENKOV 1988), Japan (KIMOTO 1964). The records of *A. nigriceps* from Taiwan refer to *A. velai* sp. nov. (BEZDĚK in prep.).

***Apophyllia purpurea* (ALLARD, 1888)**

Malaxia purpurea ALLARD, 1888: Ann. Soc. Ent. Fr. 57: 332 (type locality: Chine); ALLARD 1889: LXXXI (sep.16) (China); WEIDNER 1976: 219

Apophyllia purpurea: WEISE 1924: 184; WINKLER 1930: 1316; WU 1937: 887 (China); GRESSITT & KIMOTO 1963: 427 (key), 431 (China); WILCOX 1971: 147; KIMOTO 1989: 14 (key), 16 (Cambodia, Laos, Vietnam, China).

Apophyllia saigonensis PIC, 1927: Mém. Exot. Ent. 50: 2 (type locality: Saïgon); WILCOX 1971: 147; SAMODERZHENKOV 1988: 76 (key); KIMOTO 1989: 16 (= *purpurea*)

TYPE MATERIAL EXAMINED

Malaxia purpurea ALLARD, 1888:

Holotype (female), labelled: „36 Chine Sepik [yellow label, h] // Ex Muséo E. Allard 1899 [w, p] // HOLOTYPE [red label, p]” (in MNHN).

Apophylia saigonensis PIC, 1927:

Lectotype (male), present designation, labelled: „Saigon 6.1903 Fouquet [w, h] // LECTOTYPE [red label, p]” (in MNHN); paralectotype (female), labelled: „Saigon 1889 [w, h] // type [w, h] // TYPE [red label, p] // saigonensis n sp [w, h] // PARALECTOTYPE [red label, p]” (in MNHN).

ADDITIONAL MATERIAL EXAMINED

LAOS: Muong Sing, NW of Luang Prabang, 650 m, 6.-10.vi.1960, S. QUATE & L. QUATE leg. (3/2 in BPBM); CAMBODIA: Ph. Chisau, 40 km S of P. Penh, 20 m, 29.iv.1961, N. R. SPENCER leg. (0/1 in BPBM); Cambodge (0/1 in ZMUH); THAILAND: Mae Hong Son env., Thai/Burma border, 1300 m, 17.-21.vi.1993, J. SCHNEIDER leg. (0/1 in JBCB); Mae Hong Son, 17.-18.v.1999, R. GRIMM leg. (0/3 in SMNS); Pai City, 29.iv.1993, PACHOLÁTKO & DEMBICKÝ leg. (0/1 in JVCJ); Linsang nat. park, 500 m, 16°48'N 98°57'E, 18.-24.iv.1991, D. KRÁL leg. (0/1 in FKCC); Metah valley, 1954, J. D. HEDLEY leg. (1/2 in BMNH)

A. purpurea is well characterized by unusual structure of aedeagus and by male hind femora extended in the second third and covered with very long pale hairs. The primary types of *A. purpurea* and *A. saigonensis* deposited in MNHN were examined. The synonymy of both taxa, published by KIMOTO (1989), is confirmed.

Aedeagus as in Fig. 10.

DISTRIBUTION

China, Vietnam, Thailand, Laos, Cambodia.

Apophylia rugiceps GRESSITT & KIMOTO, 1963

Apophylia rugiceps GRESSITT & KIMOTO, 1963: Pac. Ins. Mon., 1B: 427 (key), 432-433 (type locality: Sikang: Se-long); WILCOX 1971: 147

TYPE MATERIAL EXAMINED

3 paratypes (1 male, 2 females), labelled: „Selong 4000 m 7.-8 1934 Wassuland [w, p] // W. Szechuan China Sankiangkou leg. Friedrich [w, p] // Museum Frey Tutzing [w, p] // PARATYPE [p] *Apophylia rugiceps* [h] Gressitt & Kimoto [yellow label, p]” (in BPBM).

ADDITIONAL MATERIAL EXAMINED

CHINA: Gansu, Tevo Co., Tevo env., 2000 m, 27.vi.-5.vii.1998, BENEŠ leg. (3/0 in JVCJ); Szechuan, Sankiangkou, Selong, 4000 m, 7.viii.1934, FRIEDRICH leg. (0/1 in NHMB); Sichuan, Umg. Jiushaigou, 2400 m, 29.vi.1996, D. ERBER leg. (1/0 in RBNN); Sichuan, Min Shan, 2500-4500 m, 103.50/33.10, 14.-16.vii.1990, J. KOLIBÁČ leg. (0/1 in NHMB).

Aedeagus as in Fig. 11.

DISTRIBUTION

China.

***Apophyllia savioi* PIC, 1931, bona sp.**

Apophyllia Savioi PIC, 1931: Mél. Exot. Ent. 57: 22 (type locality: Chine); GRESSITT & KIMOTO 1963: 437 (= *variicollis*).

TYPE MATERIAL EXAMINED

Lectotype (female), present designation, labelled: „Lou bou 10. 7. 23 [w, h] / type [w, h] // TYPE [red label, p] // Savioi n.sp. [w, h] // Apophyllia sp. [w, h]” (in MNHN); paralectotype (female), labelled: „Lou bou 10. 7. 23 [w, h] // 84 [w, h] / type [w, h] // 90 A. Savioi [w, h]” (in MNHN); paralectotype (female), labelled: „Chine prov. Kiangsu Ibing Musée Heude [w, p] // Lou bou 21. 7. 23 [w, h] // p. 484 [w, p] // Apophyllia sp. [w, h]” (in MNHN). Specimens are provided with one red label: „LECTOTYPE [or PARALECTOTYPE]”.

ADDITIONAL MATERIAL EXAMINED

CHINA: Fujian, Shaowu env., 13.-16.vi.1991, NIKODÝM & ČERVENKA leg. (1/0 in RBNN); Fujian, Shilin, 21.vi.1991 (1/1 in RBNN, 1/1 in DEGG); Guanxi, Miaoershan, S slope, 800-1300 m, 20.-27.vii.1997, BOLM leg. (1/1 in NHMB); Guangxi, Umg. Janshuo, 200 m, 20.vii.1996, D. ERBER leg. (0/1 in DEGG); China (0/2 in BMNH).

A. savioi was described based on 3 females by PIC (1931). Later (GRESSITT & KIMOTO 1963), it was erroneously synonymized with *A. variicollis*. Following the study of additional material, including males, it is necessary to remove *A. savioi* from synonymy and to redescribe it.

REDESCRIPTION

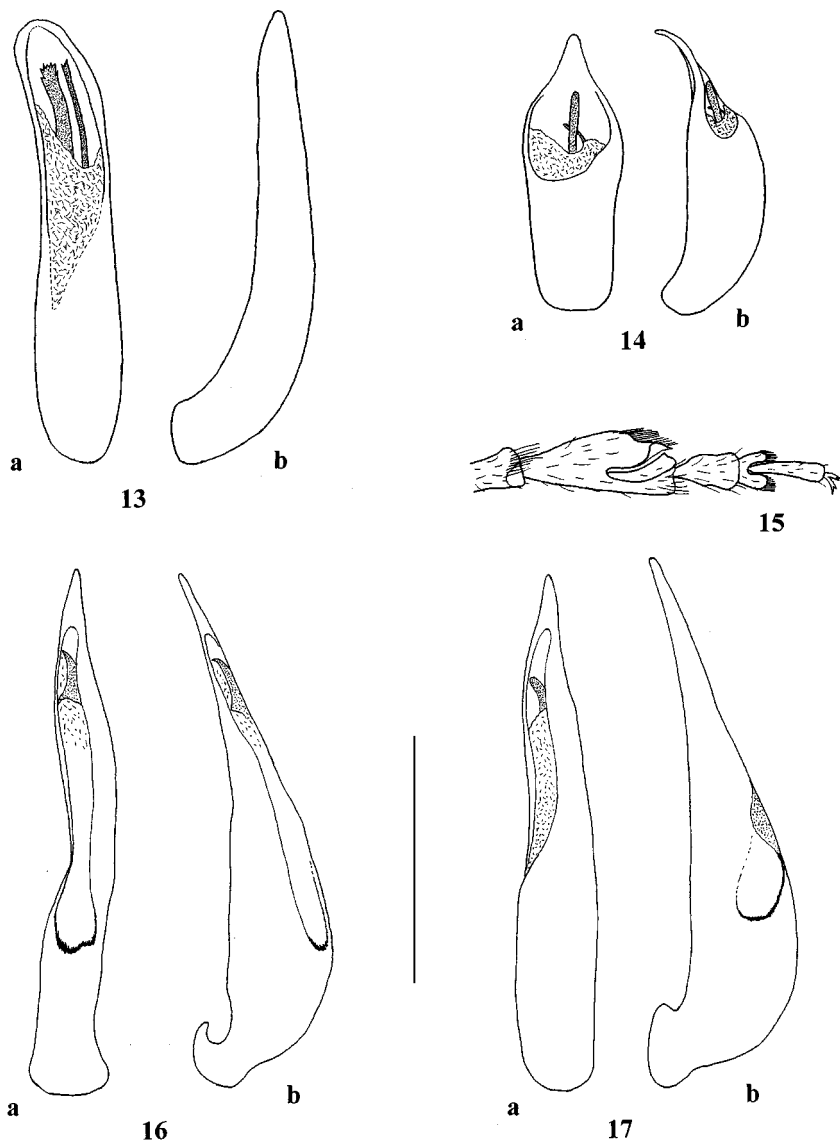
Body flattened, parallel, lustrous.

Head black, mouthparts, gula and clypeus yellow to brown. Prosternum yellow. Colour of legs varies from pale brown to blackish (usually dark), basal half of femora darker than the rest of legs. Antennomeres 1 to 4 brown, gradually darkened, rest of antennae black. Scutellum, meso-, metasternum and abdomen black. Elytra metallic green or blue, lustrous.

Labrum transverse, anterior margin slightly sinuate, covered with several long setae. Head lustrous, anterior part with very fine sparse punctures, vertex with large dense punctures. Interantennal space with large deep groove. Frontal tubercles small, subtriangular, very slightly elevated above vertex, impunctate, lustrous. Antennae slender, short, 0.65-0.70 times as long as body; length ratio of antennomeres 1 to 11: 14:7:11:16:15:13:13:12:12:11:12.

Pronotum transverse, 1.75-1.80 times as broad as long, widest at the first third, moderately rounded anteriorly and posteriorly. Anterior margin slightly sinuate,

posterior margin almost straight. All margins narrowly bordered. Anterior angles widely rounded, posterior angles obtusely angulate, widely rounded, indicated. Surface uneven, with feeble narrow longitudinal furrow and two deep lateral depressions. Pronotum covered with large feeble punctures and very short pale hairs.



13-17. 13-14 - Aedeagus (a - dorsal view, b - lateral view): 13 - *Apophyllia trinotata*, 14 - *A. trochanterina*, 15 - metatarsus of *A. trochanterina*, 16-17 - Aedeagus (a - dorsal view, b - lateral view): 16 - *A. variicollis* (Lectotype), 17 - *A. variicollis*. Scale 1 mm

Scutellum subtriangular, with apex widely rounded, densely covered with small punctures and short pale hairs.

Elytra 1.35-1.40 times as broad as the base of pronotum, densely covered with small punctures and short dense pale hairs, lustrous. Humeral calli well developed. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Underside with dense fine punctures and dense short pale hairs. Basimetatarsomere as long as two following metatarsomeres combined.

Sexual dimorphism. Male: Last visible sternite with deep semicircular excision. Claws bifid. Female: Last visible sternite complete. Claws appendiculate.

Body length 4.10-5.45 mm.

The shape of aedeagus as in Fig. 12.

DISTRIBUTION

China.

DIAGNOSIS

A. savioi can be distinguished from its congeners by the structure of aedeagus, by unusually lustrous surface and by combination of flavous pronotum and dark legs.

Apophyllia trinotata GRESSITT & KIMOTO, 1963

Apophyllia trinotata GRESSITT & KIMOTO, 1963: Pac. Ins. Mon., 1B: 427 (key), 435-436 (type locality: Szechuan: O-er, nr. Wei-chow); WILCOX 1971: 149

TYPE MATERIAL EXAMINED

Holotype (male), labelled: „Szechuan CHINA DCGraham [w, p] // OEr, nr Weichow Aug. 6-16, 1933 7000-9000 ft.alt. [w, p] // US [w, p] // TypeNo [p] 69998 [h] USNM [red label, p] // HOLOTYPE [p] *Apophyllia trinotata* m [h] Gressitt & Kimoto [red label, p]” (in USNM); paratype (male), labelled: „Szechuan CHINA DCGraham [w, p] // Hen Chuan to Meng Tseo July 8. 1924 3000 st alt. [w, h] // US [w, p] // PARATYPE [p] *Apophyllia trinotata* [h] Gressitt & Kimoto [yellow label, p]” (in BPBM); paratype (male), labelled: „Wolung 2000m Wassuland 7.-10.1934 [w, p] // W.Szechuan, China Sanklangkou leg. Friedrich [w, p] // Museum Frey Tutzing [w, p] // PARATYPE [p] *Apophyllia trinotata* [h] Gressitt & Kimoto [yellow label, p] // *Apophyllia trinotata* G + K [h] Gressitt & Kimoto det.196[p]2[w, h]” (in NHMB).

ADDITIONAL MATERIAL EXAMINED

CHINA: Sichuan, Maowen, 1000 m, 103.50/31.30, 10.-18.vii.1990, J. KOLIBÁČ leg. (2/1 in NHMB).

Aedeagus as in Fig. 13.

DISTRIBUTION
China.

***Apophylia trochanterina* GRESSITT & KIMOTO, 1963**

Apophylia trochanterina GRESSITT & KIMOTO, 1963: Pac. Ins. Mon., 1B: 427 (key), 436-437 (Type locality: Szechuan: between Hueh-shi and Bao-ngan); WILCOX 1971: 149.

TYPE MATERIAL EXAMINED

Holotype (male), labelled: „bet YuehShi & BaoNgan [w, p] // Szechuen CHINA DCGraham [w, p] // 6000-8000 ft Aug. 12, 1928 [w, p] // US [w, p] // N 106 [w, h] // TypeNo [p] 69999 [h] USNM [red label, p] // HOLOTYPE [p] *Apophylia trochanterina* [h] Gressitt & Kimoto [red label, p] // *Apophylia trochanterina* G+K [h] Gressitt & Kimoto det. 196[p] 2[w, h] „ (in USNM).

ADDITIONAL MATERIAL EXAMINED

CHINA: Yunnan, Lijian env., 10.-11.viii.1995, J. SCHNEIDER leg. (2/0 in JVCJ).

A. trochanterina was described based on a single male from Szechuan province, China. Due to the broken hind legs in the holotype, there is no mention about them in the original description. The first metatarsomere is modified in male: it is enlarged and with deep narrow incision in the apical part (Fig. 15). Female unknown.

Aedeagus as in Fig. 14.

DISTRIBUTION
China.

***Apophylia variicollis* LABOISSIÈRE, 1927**

Apophylia variicollis LABOISSIÈRE, 1927: Ann. Soc. Ent. Fr., 96: 61-62 (type locality: Yunnan); WINKLER 1930: 1316; WU 1937: 888 (Yunnan); GRESSITT & KIMOTO 1963: 427 (key), 437 (Yunnan); WILCOX 1971: 149; WEIDNER 1976: 150
Apophylia robustior PIC, 1946: L'Échange, 62: 14 (type locality: Yunnan), **syn. nov.**

TYPE MATERIAL EXAMINED

Apophylia variicollis LABOISSIÈRE, 1927:

Lectotype (male), present designation, labelled: „Yun Nam [w, h] // „TYPE [red letters, p] m [w, h] // *Apophylia variicollis* m [h] V. Laboissière - Dét. [w, p] // Le Moul't vend. via Reinbek Eing. Nr 1, 1957 [w, p]” (in ZMUH); 2 paralectotypes (females), labelled: „Yun Nam [w, h] // „TYPE [red letters, p] f [w, h]” (in ZMUH); paralectotype (female), labelled: „Coll. R. I. Sc. N. B. Chine [yellow label on which two following labels are glued, h] // Yun-nan [w, h] // Coll. V. Laboissière [w, p] // *Apophylia variicollis* m. [h] V. Laboissière - Dét. [w, p] // Para-type [orange label, p] // Cf. Ann. Soc. Ent. Fr., 1927 p. 61-62 [w, h] // R.

Mus. Hist. Nat. Belg. I. G. 12.752 [w, p]” (in ISNB). Specimens are provided with one red label: „LECTOTYPUS [or PARALECTOTYPUS], *Apophyllia variicollis* Laboissiere, 1927, des. J. Bezděk 2002”.

Apophyllia robustior PIC, 1946:

Holotype (male), labelled: „Chine Yunnan [w, h] // type [w, h] // TYPE [red label, p] // Muséum Paris Coll. M. Pic [w, p] // robustior n. sp. [w, h]” (in MNHN).

ADDITIONAL MATERIAL EXAMINED

CHINA: Yun-nan-sen (2/6 in ZMHB); Yunnan (1/2 in ZMHB); Szechuan, bet. Ningyuenfu & DenShiang Uin, 6000-8000 ft. alt., Aug. 6-8. 28, D. C. GRAHAM (0/1 in USNM); Yunnan, Yunnan-Fou (0/1 in MNHN); Yunnan Sen (1/0 in MNHN).

The primary types of *A. variicollis* and *A. robustior* were compared and undoubtedly *A. robustior* is a new synonym of *A. variicollis*.

Aedeagus of lectotype is weakly sclerotized (Fig. 16); fully sclerotized aedeagus as in Fig. 17 (Yunnansen, ZMHB).

DISTRIBUTION

China.

Apophyllia weisei (JACOBY, 1896)

Malaxia Weisei JACOBY, 1896: Ann. Mus. Civ. St. Nat. Genova, (2) 16(36): 467-468 (type locality: Sumatra: Si-Rambé)

Apophyllia Weisei: WEISE 1924: 184

Apophyllia weisei: WILCOX 1971: 149; KIMOTO 1990: 27 (Sumatra)

Apophyllia Fruhstorferi PIC, 1946: L'Échange, 62: 14 (type locality: Java), **syn. nov.**

Apophyllia fruhstorferi: WILCOX 1971: 144; KIMOTO 1990: 26 (Java)

Apophyllia Kannegieteri PIC, 1946: L'Échange, 62: 14 (type locality: Java), **syn. nov.**

Apophyllia kannegieteri: WILCOX 1971: 145; KIMOTO 1990: 26 (Java).

TYPE MATERIAL EXAMINED

Malaxia weisei JACOBY, 1896:

Lectotype (female), present designation, labelled: „SUMATRA SI - RAMBÉ XII.90-III.91 E. MODIGLIANI [w, p] // Typus [w, red letters, p] // Weisei Jac. [w, h] // Malaxia Weisei Jac. [blue label, h] // SYNTYPUS [p] Malaxia weisei Jacoby, 1896 [red label, h] // LECTOTYPUS *Malaxia Weisei* Jacoby, 1896, des. J. Bezděk 2002 [red label, p]” (in MCSN)

Apophyllia fruhstorferi PIC, 1946:

Lectotype (male), present designation, labelled: „Java orient. Montes Temgger 4000' 1890 H. Fruhstorfer [blue label, p] // voisin de pallipes [w, h]” (in MNHN); paralectotype (female), labelled: „Java occident. Pengaleugan 4000' 1893 H. Fruhstorfer [w, p] // voisin de pallipes [w, h] // type [w, h] // Type [red label, p] / Fruhstorferi n. sp. [w, h]” (in MNHN). Specimens are provided with one red label: „LECTOTYPE [or PARALECTOTYPE]”.

Apophylia kannegieteri PIC, 1946:

Holotype (female), labelled: „G. Tji Salimar W Preanger ±3000' sept. 95. I. Z. Kannegieter [w, p] // type [w, h] // Type [red label, p] // Kannegieteri n. sp. [w, h] // HOLOTYPE [red label, p]” (in MNHN)

ADDITIONAL MATERIAL EXAMINED

INDONESIA: Java, Noeba Kembangan, xii.1909, DRESCHER (0/1 in ZMHB); Java, Malabar (0/1 in DEI); Java (1/1 in BMNH)

JACOBY (1896) evidently described *A. weisei* based on several specimens, because he mentioned the body length range in his description. Very likely, he had some male available according to his sentence „claws bifid”. However, the author of the present paper found only one syntype (female) deposited in MCSN and designated it as lectotype. JACOBY's information that femora are fulvous and tarsi and tibiae black must be corrected as follows: legs fulvous with tibiae and tarsi infusate.

A. fruhstorferi and *A. kannegieteri* were described by PIC (1946) based on material from Java. PIC compared them with *A. pallipes* (JACOBY, 1892) and *A. nigriceps* LABOISSIÈRE, 1927, in his descriptions. However, the only difference between *A. fruhstorferi* and *A. kannegieteri* is the anterior part of head in holotype of *A. kannegieteri* being darkened, nearly blackish. This character led PIC to describe it as a separate species and to compare it with *A. nigriceps*, having black head.

The author of this paper did not find any morphological difference except partly infusate legs and darkened head between the lectotype of *A. weisei* and type material of PIC taxa. *A. fruhstorferi* and *A. kannegieteri* are considered to be new synonyms of *A. weisei*.

Pronotum as in Fig. 31.

Aedeagus as in Fig. 18.

DISTRIBUTION

Indonesia: Sumatra, Java.

DESCRIPTIONS OF NEW SPECIES.

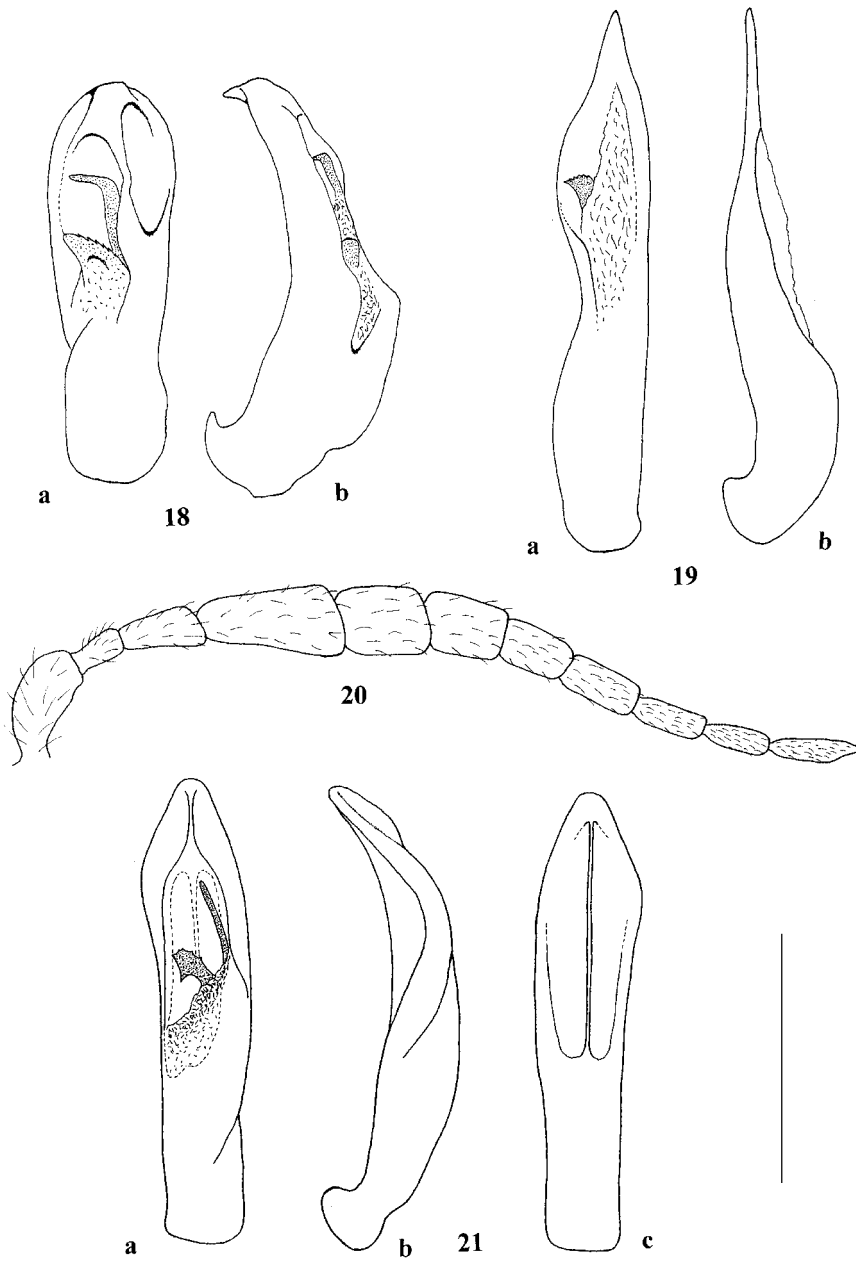
Apophylia kantneri n. sp.

TYPE MATERIAL

Holotype (male), labelled: „THAILAND bor.occ. PAI env., 2.-4.VI. pr. Mae Hong Son leg. F. Kantner 1996 [w, p]” (in NHMB). The holotype is provided with one red label: „HOLOTYPE *Apophylia kantneri* sp. nov. J. Bezděk det. 2002”.

DESCRIPTION

Body relatively robust, flattened, parallel, subopaque, pubescent.



18-21. 18-19 - Aedeagus (a - dorsal view, b - lateral view): 18 - *Apophyllia weisei*, 19 - *A. kantneri*,
 20 - antenna of *A. kantneri*, 21 - Aedeagus (a - dorsal view, b - lateral view, c - ventral view): *A.*
luzonica. Scale 1 mm

Head bicolorous. Vertex black, underside of head, mouthparts, clypeus and frontal tubercles yellow. Antennae yellow, last 5 antennomeres blackish, antennomeres 1 and 3 to 5 infusate dorsally. Pronotum yellow. Underside black, prosternum and mesoepimera yellow. Legs yellow, last 2 tarsomeres infusate. Elytra metallic green.

Labrum transverse, anterior margin sinuate, covered with 6 long setae (3 setae at each side). Anterior part of head lustrous, covered with very fine sparse punctures and short pale setae. Two deep depressions are situated in front of antennal insertions. Frontal tubercles very large, subtriangular, slightly elevated above vertex, covered with microsculpture, subopaque. Eyes small, interocular space 3 times as broad as transverse diameter of each eye. Vertex opaque, covered with large dense punctures and dense fine short pale hairs. Indistinct feeble furrow, running backwards from interantennal space and somewhat deeper between frontal tubercles, disappears on vertex. Antennae robust, short, 0.65 times as long as body; length ratio of antennomeres 1 to 11: 12:7:14:20:13:11: 11:10:9:9:12. Antennomeres 3 to 7 extended (Fig. 20), antennomere 3 and base of antennomere 4 flattened, apex of antennomere 4 and antennomeres 5 to 11 cylindrical.

Pronotum transverse (Fig. 26), 2.6 times as broad as long, widest before the middle. Anterior margin widely rounded, lateral margins rounded, posterior margin almost straight. Anterior and posterior margins narrowly bordered, lateral margins indistinctly bordered. Anterior angles rectangular, widely rounded, posterior angles obtusely angulate, marked, widely rounded. Surface uneven, with two very large subdiagonal depressions laterally, two small shallow depressions basally near posterior angles and two small shallow depressions in median line. Pronotum densely covered with large punctures and dense short pale hairs.

Scutellum triangular, with apex widely rounded, densely covered with small punctures and short pale hairs, opaque.

Elytra 1.3 times as broad as the base of pronotum, densely covered with small punctures and short dense pale hairs. Humeral calli well developed. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Basimetatarsomere 2.0 times as long as two following metatarsomeres combined. Claws bifid.

Underside with dense fine punctures and dense short pale hairs. Last sternite with deep widely rounded semioval incision.

Female unknown.

Body length of holotype 5.30 mm.

The shape of aedeagus as in Fig. 19.

DIAGNOSIS

A. kantneri sp. nov. can be easily distinguished from its congeners by the combination of the following characters: pronotum transverse, 2.6 times as broad

as long (Fig. 26), antennomeres 3 to 7 extended (Fig. 20) and the shape of aedeagus (Fig. 19).

ETYMOLOGY

Dedicated to its collector, FRANTIŠEK KANTNER (České Budějovice, Czech Republic), a specialist in Clytrinae.

Apophyllia luzonica n. sp.

TYPE MATERIAL

Holotype (male), labelled: „Subuagrn Luzon [w, p]” (in NHMB); 4 paratypes (1 male, 3 females), labelled: „Philippinen Luzon [p] n. babugao [w, h]” (in ZMHB, 1 female in JCB); 1 paratype (female), labelled: „LUZON Isabela Pr. McGregor Sn Mariano [w, p]” (in USNM). The specimens of newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophyllia luzonica* sp. nov. J. Bezděk det. 2002”.

DESCRIPTION

Body flattened, parallel, subopaque. Black; mouthparts (labrum somewhat darkened), anterior margin of clypeus, small spot on genae, knees and the first two antennomeres brown; elytra metallic green.

Labrum transverse, anterior margin very slightly sinuate, covered with 8 long setae (4 setae at each side). Anterior part of head lustrous, with very fine sparse punctures and a transverse row of long pale setae running from antennal insertions to both lateral sides of clypeus. Interantennal space with small deep groove. Frontal tubercles small, subtriangular, slightly elevated above vertex, shiny. Vertex opaque, covered with large dense punctures and dense fine short pale hairs. Deep furrow running backwards from frontal tubercles disappears on vertex. Antennae filiform, 0.9 times as long as body; length ratio of antennomeres 1 to 11: 20:9:13:28:22:23:20:18:16:17:18. First antennomere robust, antennomeres 2 to 8 with very long dense pale hairs directed downwards.

Pronotum subquadrate (Fig. 27), 1.5-1.6 times as broad as long, widest at the first quarter. Anterior margin widely rounded and deeply sinuate in the middle, posterior margin almost straight. Anterior and posterior margins indistinctly bordered, lateral margins unbordered. Anterior angles widely rounded, posterior angles obtusely angulate, widely rounded, with small tooth directed upwards. The stout ridge, interrupted in the middle, is situated along anterior margin. Surface uneven, with two very large cavity-like depressions laterally, two small depressions basally near posterior angles and deep longitudinal furrow running from middle of anterior margin to the middle of posterior margin, less distinct on the disc. Anterior margin and the stout ridge sparsely covered with very large punctures, lustrous, nearly glabrous. The rest of surface with smaller dense punctures and dense short pale hairs.

Scutellum subtriangular, with apex widely rounded, densely covered with small punctures and short pale hairs, opaque.

Elytra 1.4-1.5 times as broad as the base of pronotum, densely covered with small punctures and short dense pale hairs. Humeral calli well developed. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Underside with dense fine punctures and dense short pale hairs. Basimetatarsomere 2.6 times as long as two following metatarsomeres combined.

Sexual dimorphism. Male: Claws bifid. Last visible sternite with rounded shallow excision. Female: Claws appendiculate. Last visible sternit complete.

Body length 4.95-6.00 mm (holotype 5.30 mm).

The shape of aedeagus as in Fig. 21.

DISTRIBUTION

Philippines: Luzon Isl.

DIAGNOSIS.

Due to very deep depressions on pronotum *A. luzonica* sp. nov. can be compared only with *A. eroshkinae* SAMODERZHENKOV, 1988, from Vietnam within the *Apophyllia* species with black head, pronotum and legs. *A. luzonica* n. sp. differs in very long basimetatarsomere (2.6 times as long as two following metatarsomeres combined), the first two antennomeres brown, and in the structure of aedeagus (Fig. 21).

ETYMOLOGY

Named after Luzon Isl. (Philippines) where the type series was collected.

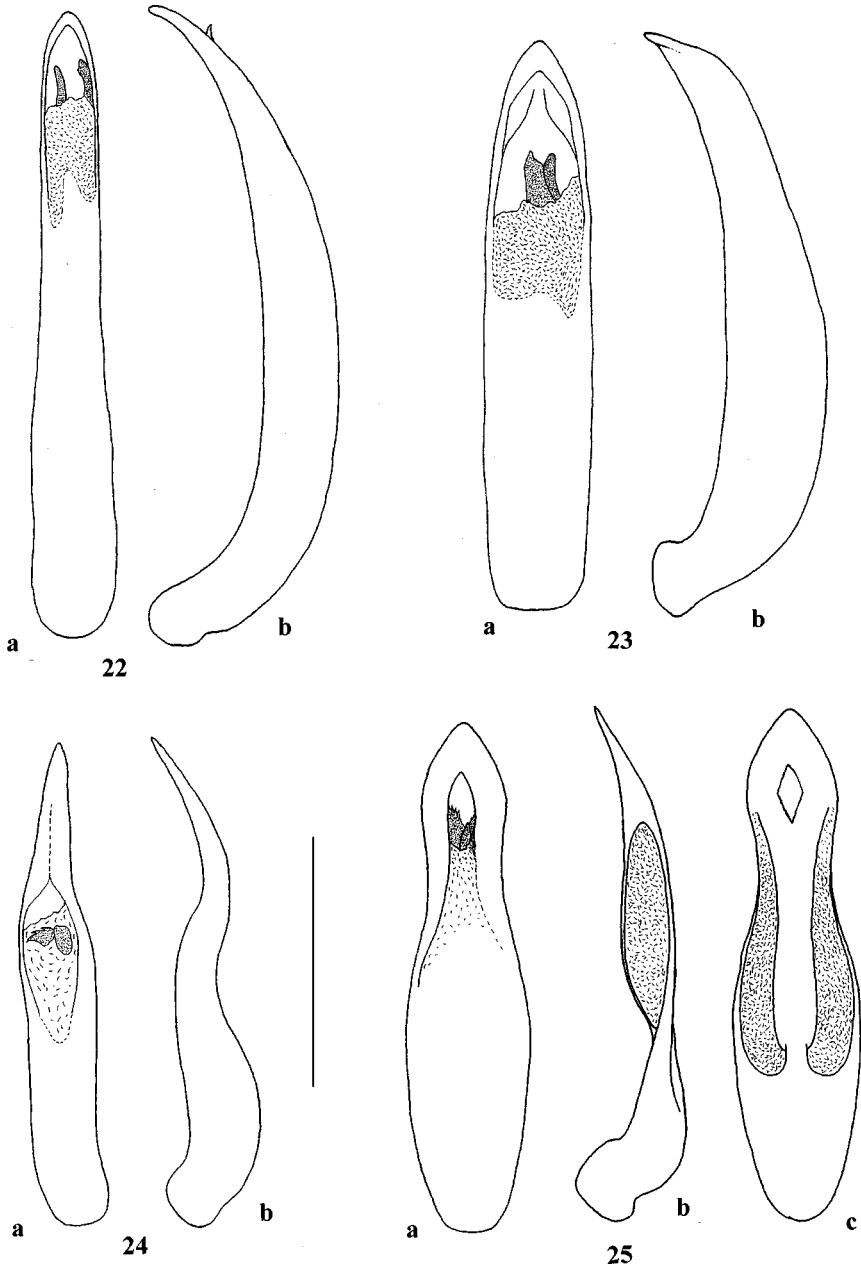
Apophyllia pavlae n. sp.

TYPE MATERIAL

Holotype (male) and 2 paratypes (males), labelled: „YUNNAN 2000-2500m 25.42N 100.08E CANGSHAN mts. E slope 21/6.92 David Král leg. [w, p]” (in NHMB); 6 paratypes (males), labelled: „YUNNAN 2500-3000m 25.43N 100.06E CANGSHAN mts. E slope 24/7.92 Vít Kubáň leg. [w, p]” (in NHMB); 7 paratypes (males), labelled: „China, Yunnan, Lijian env., 10.-11.8. J.Schneider lgt., 1995 [w, p]” (4 in JVCJ, 3 in JCB). The specimens of newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophyllia pavlae* sp. nov. J. Bezdek det. 2002”.

DESCRIPTION

Body flattened, subparallel, slightly widened backwards, subopaque. Black; labrum, bases of the first two antennomeres, mandibles at apices and knees dark



22-25. Aedeagus (a - dorsal view, b - lateral view, c - ventral view): 22 - *Apophyllia pavlae*, 23 - *A. sprecheriae*, 24 - *A. viridipennis*, 25 - *A. yunnanica*. Scale 1 mm

brown. Elytra dully metallic green, narrow stripe along lateral margins often with golden tint.

Head slightly convex, anterior part of head and frontal tubercles lustrous, sparsely covered with small punctures, vertex opaque, coarsely and densely punctate. Labrum transverse, anterior margin very slightly sinuate, covered with 8 long setae (4 setae at each side). Interantennal space with deep groove. Frontal tubercles large, subtriangular, distinctly elevated above vertex, shiny. Anterior part of head covered with long pale hairs, vertex nearly glabrous. Antennae robust, 0.60-0.65 times as long as the body; length to width ratios of antennomeres 1 to 11: 20 x 6, 11 x 5, 21 x 6, 23 x 8, 18 x 9, 16 x 9, 15 x 9, 14 x 9, 10 x 8, 10 x 6, 15 x 6. Antennomere 9 is subquadrate. Last six antennomeres are distinctly flattened. Antennomeres 3 to 6 with extended apex, clubbed.

Pronotum transverse (Fig. 28), 2.1 times as broad as long, widest at base, almost parallel, very slightly narrowed anteriorly. Anterior and posterior margins slightly sinuate. Anterior angles sharp, with rounded corners, with small dent directed laterally; posterior angles widely rounded, with small dent directed upwards. Surface uneven, median feeble depression situated in front of middle, laterally with two depressions, small feeble depressions also near posterior angles. Pronotum densely covered with coarse punctures, somewhat smaller than on head, and short pale hairs, sometimes overstrained on the disc.

Scutellum subtriangular, with widely rounded apex, covered with small dense and fine punctures and dense short pale hairs.

Elytra 1.5 times as broad as the base of pronotum, very densely and coarsely punctate, the punctures as large as on pronotum, very narrow strip along the sides (often with golden tint) shiny and almost impunctate. Humeral calli well developed. Elytral surface very sparsely covered with short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Underside with dense fine punctures and dense short pale hairs. Last visible sternite with deep triangular excision. Basimetatarsomere 1.5 times as long as two following metatarsomeres combined. Claws bifid.

Body length 5.95-6.75 mm (holotype 6.40 mm).

Female unknown.

The shape of aedeagus as in Fig. 22.

DISTRIBUTION

China (Yunnan prov.).

DIAGNOSIS

Due to robust antennae *A. pavlae* sp. nov. resembles the species with black legs of *A. aeruginosa*-group with black legs, but it can be clearly distinguished by the structure of aedeagus (Fig. 22) and the lack of the dents on abdomen. *A. pavlae* sp. nov. seems to be closely related *A. viridipennis* (JACOBY, 1885) which differs in less robust antennae, the structure of aedeagus (Fig. 24) and the lack of narrow

impunctate strip along the elytral sides. Other *Apophyllia* species with black pronotum and legs (*A. luzonica* sp. n., *A. eroshkinae* SAMODERZHENKOV, 1988, *A. assamensis* (JACOBY, 1891) and *A. himalayana* MEDVEDEV, 1993) differ in filiiform antennae. Moreover, pronotum of *A. luzonica* sp. n., and *A. eroshkinae* is covered with very deep depressions.

ETYMOLOGY

Dedicated to my dear friend Dr. PAVLA ŠTASTNÁ (Brno), zoologist and environmentalist.

Apophyllia sprecheriae n. sp.

TYPE MATERIAL

Holotype (male), labelled: „YUNNAN 1995 25 km E of ZHONGDIAN 3300-4000 m BOLM lgt., 12.-14. JUL [w, p]” (in NHMB); 2 paratypes (females), the same data as in holotype (in NHMB and JCB). The specimens of newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophyllia sprecheriae* sp. nov. J. Bezděk det. 2002”.

DESCRIPTION

Body flattened, parallel, densely pubescent.

Head and pronotum black with distinct metallic tint, lustrous. Femora black with paler apex, tibiae and tarsi yellow, last two tarsomeres infusate. Antennae yellow, antennomere 1 with dark brown spot dorsally, antennomeres 5 to 8 with somewhat darkened apex, last 3 antennomeres black. Elytra metallic green or blue, with extreme suture black and narrow stripe along suture golden or purplish.

Labrum transverse, with several short pale setae. Head lustrous, with a row of several setae in front of anterior margin of antennal insertions. Interantennal space with small deep groove. Frontal tubercles large, subtriangular, slightly elevated above vertex, impunctate, shiny. Longitudinal furrow running backwards from frontal tubercles disappears on vertex. Vertex densely covered with small punctures and very short pale pubescence. Antennae short, slender, 0.5-0.6 times as long as the body; length ratio of antennomeres 1 to 11: 19:10:13:16:11:11:11:12:10:9:11.

Pronotum transverse (Fig. 29), slightly convex, 1.9-2.1 times as broad as long, widest in the middle, narrowed anteriad and posteriad. Pronotal margins narrowly bordered. Anterior angles rectangular, with rounded corners, posterior angles obtusely angulate, widely rounded. Surface uneven, with two feeble depressions longitudinally in the middle and two somewhat deeper depressions laterally. Pronotum covered with small sparse punctures and long dense pale hairs.

Scutellum small, subtriangular, with apex widely rounded, surface with small and dense punctation and dense short pale hairs.

Elytra 1.4 times as broad as the base of pronotum, parallel. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface finely punctate and covered with pale hairs. Basimetatarsomere 1.2 times as long as two following metatarsomeres combined.

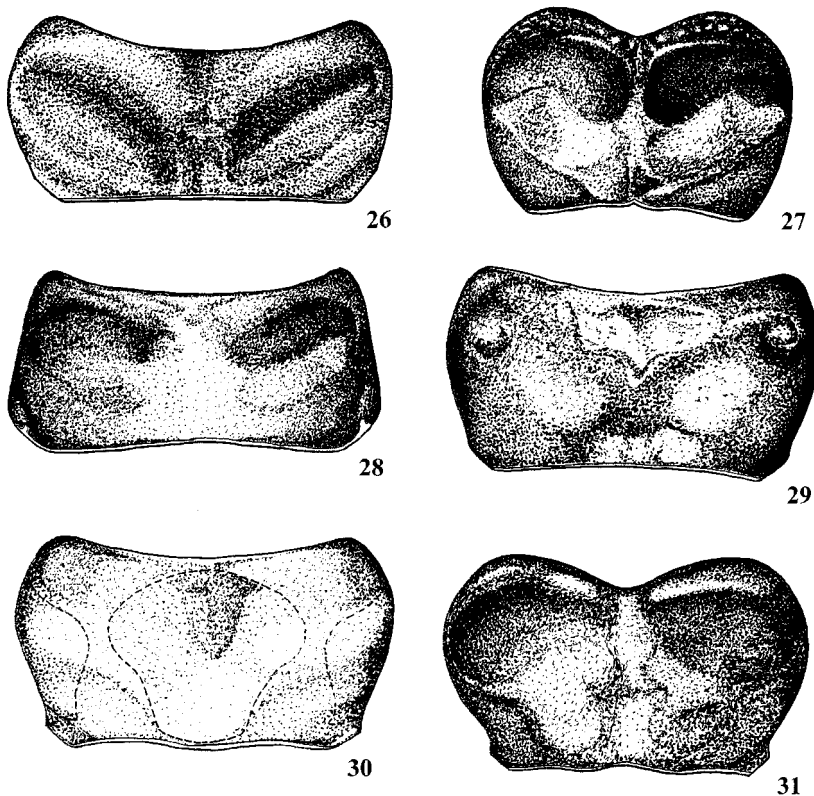
Body length 5.50-6.40 mm (holotype 5.50 mm).

The shape of aedeagus as in Fig. 23.

Sexual dimorphism: Male: The last visible sternite with deep triangular excision, claws bifid. Female: The last visible sternite complete, claws appendiculate.

DISTRIBUTION

China (Yunnan prov.).



26-31. Pronotum: 26 - *Apophyllia kantneri* n. sp., 27 - *A. luzonica* n. sp., 28 - *A. pavlae* n. sp., 29 - *A. sprecheriae* n. sp., 30 - *A. yunnanica* n. sp., 31 - *A. weisei*. Scale 1 mm. (M. OBORIL orig.)

DIAGNOSIS

A. sprecheriae sp. nov. can be distinguished from its congeners by the following combination of characters: head and pronotum lustrous, legs bicolorous, short antennae and the structure of aedeagus (Fig. 23).

ETYMOLOGY

Dedicated to Dr. Eva SPRECHER, a curator of Museum of Natural History, Basel, who enabled the author to study many interesting *Apophyllia* species.

Apophyllia yunnanica n. sp.

TYPE MATERIAL

Holotype (male), labelled: „China Yunnan, 8-9.VII. LUGU LAKE-Luo Shui 27.45N 100.45E E.Jendek leg. 1992 [w, p]” (in JVCJ); 3 paratypes (females), the same data as in holotype (2 in JVCJ, 1 in JBCB). The specimens of newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS] *Apophyllia yunnanica* sp. nov. J. Bezděk det. 2002”.

DESCRIPTION

Body flattened, subparallel, slightly widened backwards, densely pubescent, dull.

Head bicolorous. Vertex, frontal tubercles, postgenae and labrum black, mandibles at apices and two last segments of palpi maxillares brownish to blackish, anterior part of head, mouthparts and gula yellow. Pronotum yellow with three large black spots. Median spot is situated in the middle of pronotum and nearly touching the posterior margin of pronotum. Two large lateral spots widely passing the lateral sides of pronotum. Scutellum black. Elytra dully metallic green. Prosternum yellow with triangular black spot situated in anterior part and extended between coxae. Mesosternum black. Metasternum black with narrowly yellow posterior margin. Abdomen black (in male) or posterior margin of last visible sternite and apical part of pygidium widely yellow (in female). Antennomeres 1-5 gradually yellow to dark brown, the last six antennomeres black. Antennomere 1 infusate dorsally. Legs yellow, posterior parts of profemora and anterior parts of meso- and metafemora with black stripe, tarsi and outsides of tibiae infusate.

Anterior part of head lustrous, sparsely covered with small punctures, vertex opaque, coarsely and densely punctate. Labrum transverse, anterior border slightly sinuate, covered with 6 long setae in row (3 setae at each side). Interantennal space with small longitudinal groove. Frontal tubercles subtriangular, slightly elevated above vertex, lustrous. Frons with indistinct large fovea. Head densely covered with long hairs. Antennae slender, 0.8 times as long as the body; length ratio of antennomeres 1 to 11: 19:8:18:21:21:20:20:18:17:15:18.

Pronotum transverse (Fig. 30), slightly convex, 1.8 times as broad as long, widest at the first third, narrowed anteriorly and posteriorly; opaque, whole surface

with coarse and dense punctures, laterally with 2 feeble depressions, median feeble depression situated in front of middle. Anterior margin evenly and moderately sinuate, lateral and basal margins feebly rounded. Anterior and posterior margins indistinctly bordered, lateral margins unbordered. Both anterior and posterior angles with small dent, anterior angles rectangular, posterior angles marked, obtusely angulate.

Scutellum small, initially almost parallel, then widely rounded, surface with coarse and dense punctation, opaque.

Elytra broader than base of pronotum, almost parallel, slightly widened backwards, opaque. Humeral calli well developed. Elytral surface very densely covered with coarse confused punctures and long pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface shiny, finely punctate and covered with pale hairs.

Legs fairly long, basimetatarsomere as long as two following metatarsomeres combined.

Body length 5.50–6.75 mm (holotype 5.50 mm).

The shape of aedeagus as in Fig. 25.

Sexual dimorphism: Male: Abdomen black, the last visible sternite with semicircular excision, claws bifid. Female: Posterior margin of last sternite and apical part of pygidium yellow. The last visible sternite complete, claws appendiculate.

DISTRIBUTION

China (Yunnan prov.).

DIAGNOSIS

A. yunnanica is externally very similar to *A. rugiceps* GRESSITT & KIMOTO, 1963, the exact identification is possible only based on the study of aedeagus (Figs 11 and 25). *A. thalassina* (FALDERMANN, 1835) and *A. trinotata* GRESSITT & KIMOTO, 1963, can be distinguished by two longitudinal carinae on each elytra running from humeral calli.

ETYMOLOGY

The new species is named after the Yunnan province, southern China, where the type series was collected.

SPECIES EXCLUDED FROM THE GENUS *APOPHYLLIA*

***Galerucella aenescens* (FAIRMAIRE in DEYROLLE & FAIRMAIRE 1878)**

Galeruca aenescens FAIRMAIRE in DEYROLLE & FAIRMAIRE, 1878: Ann. Soc. Ent. Fr. 47: 140 (type locality: Chine centrale [by the title])

Apophyllia aenescens: WEISE, 1889: 569 (as syn. of *A. thalassina*); WEISE 1924: 184 (as syn. of *A. thalassina*); WINKLER 1930: 1316 (as ?syn. of *A. thalassina*)

TYPE MATERIAL EXAMINED

Holotype (unsexed), labelled: „*Galeruca aenescens* Fairm. Chin. bor. [w, h] / / TYPE [red label, p] // Museum Paris 1906 Coll. L. Fairmaire [w, p] // *Galerucella thalassina* Fald. (Auchenia) Chin. bor. [w, h]” (in MNHN)

Galerucella aenescens was erroneously treated as a synonym of *Apophyllia thalassina* by WEISE (1889; 1924) and WINKLER (1930). Subsequent authors placed it in the genera *Galerucella* CROTCH, 1873 or *Pyrrhalta* JOANNIS, 1866 (e.g. OGBOLIN 1936; WILCOX 1971; KIMOTO & CHU 1996). The holotype was examined and *G. aenescens* must be actually excluded from the genus *Apophyllia* and placed in the genus *Galerucella*.

***Pyrrhalta nila* (MAULIK, 1936) comb. nov.**

Apophyllia nila MAULIK, 1936: Fauna of British India: 80-81 (type locality: Nilgiri hills); WILCOX 1971: 146

TYPE MATERIAL EXAMINED

Lectotype (female), present designation, labelled: „Type [round white label with red margin, p] // Nilgiri Hills. G.F.Hampson. 94-89. [w, p] // *Apophyllia nila* Maulik [h] S. Maulik [p] Type 1934 [w, h]” (in BMNH); 2 paralectotypes (females), labelled: „Nilgiri Hills. G.F.Hampson. 94-89. [w, p] // *Apophyllia nila* Maulik [h] S. Maulik [p] 1934 [w, h]” (in BMNH). Specimens are provided with one red label: „LECTOTYPUS [or PARALECTOTYPUS] *Apophyllia nila*, Maulik, 1936, des. J. Bezděk 2002”.

ADDITIONAL MATERIAL EXAMINED

INDIA: Nilgiri hills (0/1 in BMNH).

MAULIK (1936) described *A. nila* based on 3 females collected in Nilgiri hills, India. Unfortunately, the male is unknown. However, the deep yellow stripes on the elytral sides allow to exclude this species from the genus *Apophyllia* and provisionally to include it into the genus *Pyrrhalta*. Its taxonomic status should be cleared when the males are found.

***Cneorane violaceipennis* ALLARD, 1889**

Cneorane violaceipennis ALLARD, 1889: C.R.Soc.Ent.Belg., 33: LXX (sep.5) (type locality: Chine boréale); LABOISSIÈRE 1927: 59; GRESSITT & KIMOTO 1963: 553; WILCOX 1973: 505.

Apophyllia violaceipennis: WEISE 1924: 184; WINKLER 1930: 1316; WU 1937: 888 (N China, Burma).

The type material was not studied. As stated by LABOISSIÈRE (1927), several authors (e. g. WEISE 1924; WINKLER 1930; WU 1937) misinterpreted ALLARD's description. ALLARD (1889) described *Cneorane violaceipennis* on page 70, but WEISE (1924) cited page 71, where the genus *Apophyllia* starts, and placed *violaceipennis* in *Apophyllia*. This misunderstanding was followed by WINKLER (1930) and WU (1937).

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REFERENCES

- ALLARD, E., 1888. Synopsis des Galerucines à corselet sillonné transversalement, 1^{re} partie. Ann. Soc. Entomol. Fr., (6)8: 305-332.
- , 1889. Note sur les Galérucides, Coléoptères phytophages. Compt.-rend. Soc. Entomol. Belg., 1889: LXVI-LXXXVII (sep. 1-18).
- BALY, J. S., 1887. Notes on Galerucinae and descriptions of two new species of Hispidiae. Entomol. Monthly Mag., 23: 268-270.
- , 1889. Notes on *Aulacophora* and allied genera. Trans. Entomol. Soc. London, 1889: 297-309.
- CHŪJŌ, M., 1962. A taxonomic study on the Chrysomelidae (Insecta: Coleoptera) from Formosa Part XI. Galeruciné. Philipp. Journ. Sci., 91(1-2): 1-239.
- DEJEAN, P. F., 1837. Catalogue des Coléoptères de la collection de M. le Comte DEJEAN. Troisième édition, revue, corrigée et augmentée. Paris, XIV + 503 pp.
- DEYROLLE, H., & FAIRMAIRE, L., 1878. Descriptions de Coléoptères recueillis par M. l'abbé DAVID dans la Chine centrale. Ann. Soc. Entomol. Fr., (5)8: 87-140.
- DUBESHKO, L. N., & MEDVEDEV, L. N., 1989. Ekologia listodov Sibiri i Dalnego Vostoka. Izdatelstvo Irkutskogo universiteta, Irkutsk, 224 pp.
- FAIRMAIRE, L., 1888. Notes sur les Coléoptères des environs de Pékin (2^e Partie). Revue Entomol., 7: 111-160.
- GRESSITT, J. L., & KIMOTO, S., 1963. The Chrysomelidae (Coleopt.) of China and Korea. Part 2. Pacific Insects Monograph, 1B: 301-1026.
- JACOBY, M., 1884. Descriptions of new genera and species of Phytophagous Coleoptera from Sumatra. Notes Leyden Mus., 6: 9-70.
- , 1896. Descriptions of new genera and species of phytophagous Coleoptera obtained by Dr. MODIGLIANI in Sumatra. Ann. Mus. Civ. Stor. Nat. Genova, (2) 16(36): 377-501.
- , 1903. A further contribution to our knowledge of African Phytophagous Coleoptera. Part II. Trans. Entomol. Soc. London, 1903 (1): 1-38.
- JOLIVET, P., & HAWKESWOOD, T. J., 1995. Host-plants of Chrysomelidae of the world: an essay about the relationships between the leaf-beetles and their food-plants. Backhuys Publishers, Leiden, XIII + 281 pp.
- KIMOTO, S., 1964. The Chrysomelidae of Japan and the Ryukyu Islands. VI Subfamily Galerucinae I. Journ. Fac. Agric. Kyushu Univ., 1964-1966, 13 (2): 287-308.

- , 1985. Family Chrysomelidae (Galerucinae). Check-list of Coleoptera of Japan, No. 28: 1-16.
- , 1989. Chrysomelidae (Coleoptera) of Thailand, Cambodia, Laos and Vietnam. IV. Galerucinae. *Esakia*, **27**: 1-241.
- , 1990. Check-list of Chrysomelidae of South East Asia, South of Thailand and West of Irian-Jaya of Indonesia, V. Galerucinae, I. Kurume Univ. Journ., **39**(1): 23-56.
- KIMOTO, S., & TAKIZAWA H. 1994. Leaf Beetles (Chrysomelidae) of Japan. Tokai University Press, Tokyo, XVII + 539 pp.
- LABOISSIÈRE, V., 1922. Étude des Galerucini de la Collection du Musée du Congo belge. *Rev. Zool. Afr.*, **10**(3): 219-271.
- , 1927. Contribution à l'étude des Galerucini de l'Indochine et du Yunnan avec descriptions de nouveaux genres et espèces (Col., Chrysomelidae). *Ann. Soc. Entomol. Fr.*, **96**: 37-62.
- MAULIK, S., 1936. The fauna of British India including Ceylon and Burma. Coleoptera, Chrysomelidae (Galerucinae). Taylor and Francis, London, XV + 648 pp.
- MOHAMEDSAID, M., S. 2000. List of malaysian Chrysomelidae (Coleoptera) in the collection of UKM. *Serangga*, **5**(2): 343-360.
- OGLOBLIN, D. A., 1936. Chrysomelidae, Galerucinae. Faune de l'URSS, Insectes Coléoptères, n. s. 8, 26 (1), Academie des Sciences de l'URSS, Moskva-Leningrad, XIV + 455 pp. (in Russian and French).
- D'ORBIGNY, C., (ed.) 1842. Dictionnaire universel d'histoire naturelle. Tome 2. Bureau principal de l'éditeur, Paris, 795 pp.
- PIC, M., 1927. Coléoptères du Globe. *Mélang. Exot.-Entomol.*, **50**: 1-36.
- , 1931. Nouveautés diverses. *Mélang. Exot.-Entomol.*, **57**: 1-36.
- , 1945. Coléoptères du globe (suite). *Échange*, **61**: 1-4.
- , 1946. Coléoptères du globe (suite). *Échange*, **62**: 13-16.
- SAMODERZHENKOV, E. V., 1988. Zhuki-listoedy triby Galerucini (Chrysomelidae, Galerucinae) fauny V'etnama, pp. 70-75. In: MEDVEDEV L. N. & STRIGANOVA B. R. (eds.) - Fauna i ekologiya neskomykh V'etnama, Nauka, Moskva, 199 pp. (in Russian)
- SEENO, T. N., & WILCOX, J. A., 1982. Leaf beetle genera (Coleoptera: Chrysomelidae). *Entomography*, **1**: 1-221.
- TAKIZAWA, H., 1985. Notes on Korean Chrysomelidae, part 2. *Nature & Life*, **15**(1): 1-18.
- THOMSON, J., 1858. Voyage au Gabon. Historie naturelle des Insectes et des Arachnides recueillis pendant un voyage fait au Gabon en 1856 et en 1857 par M. Henry C. DEYROLLE sous les auspices de MM. le Comte de MNISZCH et James THOMSON précédée de l'histoire du voyage. Archives Entomologiques ou recueil contenant des illustrations d'insectes nouveaux ou rares, II. Bureau du trésorier de la société entomologique de France, Paris, 469 pp.
- WEIDNER, H., 1976. Die Entomologischen Sammlungen des Zoologischen Instituts und des Zoologischen Museums der Universität Hamburg. IX. Teil. Insecta VI. Mitt. Hamburg. Zool. Mus. Inst., **73**: 87-264.
- WEISE, J., 1889. Insecta, a Cl. G. N. POTANIN in China et in Mongolia novissime lecta. IX. Chrysomelidae et Coccinellidae. *Horae Soc. Entomol. Rossicae*, **23**: 560-653.
- , 1897. Synonymische Bemerkungen über europäische Chrysomeliden. *Deutsche Entomol. Zeitschr.*, **1896** (1897) (2): 293-296.
- , 1907. Neue Chrysomeliden und Coccinelliden von der Ausbeute der Herren Oskar NEUMANN und Baron VON ERLANGER in Abyssinien. *Arch. f. Naturges.*, **73**(1): 210-232.
- , 1923. Uebersicht der Galerucinen. *Wiener Entomol. Ztg.*, **40**(1-4): 124.
- , 1924. Chrysomelidae: 13. Galerucinae. In: JUNK W. & SCHENKLING S. (eds.): *Coleopterorum Catalogus*, Pars 78. W. Junk, Berlin, 225 pp.
- WILCOX, J. A., 1971. Chrysomelidae: Galerucinae (Oidini, Galerucini, Metacyclini, Sermylini). In: WILCOX J. A. (ed.): *Coleopterorum Catalogus Supplementa*. Pars 78(1), Second edition. W. Junk, 's-Gravenhage, 1-220.
- , 1973. Chrysomelidae: Galerucinae (Luperini: Luperina). In: WILCOX J. A. (ed.): *Coleopterorum Catalogus Supplementa*. Pars 78(3), Second edition. W. Junk, 's-Gravenhage, 433-664.
- WINKLER, A., 1930. *Catalogus Coleopterorum regionis palaearcticae*. Pars 11. A. Winkler, Wien, pp. 1265-1392.

- WU, CH., F. 1937. Catalogue Insectorum Sinensium (Catalogue of Chinese insects). Volume III. The Fan Memorial Institute of Biology, Peiping, X + 1312 pp.
- ZAYTSEV, YU. M., & SAMODERZHENKOV, E. V., 1988. Morfologiya lichinki roda *Apophyllia* CHEVR. (Coleoptera, Chrysomelidae, Galerucinae) i mesto roda v sisteme, pp. 95-98. In: MEDVEDEV L. N. & STRIGANOVA B. R. (eds.) - Fauna i ekologiya neskomykh V'etnama, Nauka, Moskva, 199 pp.